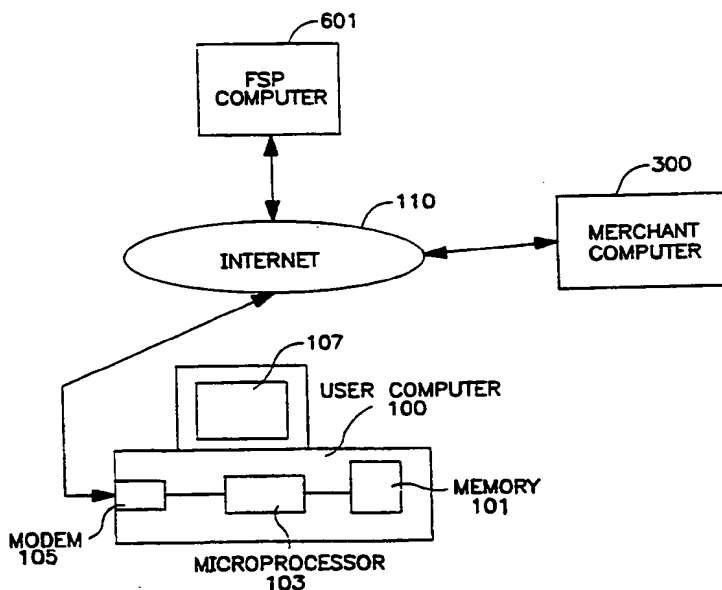




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>6</sup> : G06F 17/60	A1	(11) International Publication Number: WO 96/41286 (43) International Publication Date: 19 December 1996 (19.12.96)
(21) International Application Number: PCT/US96/02854 (22) International Filing Date: 29 February 1996 (29.02.96) (30) Priority Data: 08/477,438 7 June 1995 (07.06.95) US (71) Applicant: MASTERCARD INTERNATIONAL, INC. [US/US]; 2000 Purchase Street, Purchase, NY 10577 (US). (72) Inventor: HOGAN, Edward, J.; 220-55 46th Avenue, Bayside, NY 11361 (US). (74) Agents: SCHEINFELD, Robert, C. et al.; Brumbaugh, Graves, Donohue & Raymond, 30 Rockefeller Plaza, New York, NY 10112 (US).		(81) Designated States: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).  Published With international search report.

(54) Title: SYSTEM AND METHOD FOR CONDUCTING CASHLESS TRANSACTIONS ON A COMPUTER NETWORK



(57) Abstract

In a commercial transaction system, a system user uses a personal computer to interact with merchant computers over the Internet to conduct cashless transactions. Each system user computer processes data including a balance stored in the computer's memory and updates the stored data at the end of the transaction. The system is specially designed for purchases of items or transactions of relatively small monetary value. In this manner, the amount of the transaction is deducted from the balance on the computer. In accordance with the invention, when the existing balance associated with the computer does not cover the price of the transaction, the system provides a reload feature which gives the user an option to increase the balance of the computer. Such a feature allows the purchase to be made without inconveniencing the user to increase the balance by other means. Each time the balance is increased by a reload, the user's issuer bank bills the user for the reload amount.

**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AM	Armenia	GB	United Kingdom	MW	Malawi
AT	Austria	GE	Georgia	MX	Mexico
AU	Australia	GN	Guinea	NE	Niger
BB	Barbados	GR	Greece	NL	Netherlands
BE	Belgium	HU	Hungary	NO	Norway
BF	Burkina Faso	IE	Ireland	NZ	New Zealand
BG	Bulgaria	IT	Italy	PL	Poland
BJ	Benin	JP	Japan	PT	Portugal
BR	Brazil	KE	Kenya	RO	Romania
BY	Belarus	KG	Kyrgyzstan	RU	Russian Federation
CA	Canada	KP	Democratic People's Republic of Korea	SD	Sudan
CF	Central African Republic	KR	Republic of Korea	SE	Sweden
CG	Congo	KZ	Kazakhstan	SG	Singapore
CH	Switzerland	LI	Liechtenstein	SI	Slovenia
CI	Côte d'Ivoire	LK	Sri Lanka	SK	Slovakia
CM	Cameroon	LR	Liberia	SN	Senegal
CN	China	LT	Lithuania	SZ	Swaziland
CS	Czechoslovakia	LU	Luxembourg	TD	Chad
CZ	Czech Republic	LV	Latvia	TG	Togo
DE	Germany	MC	Monaco	TJ	Tajikistan
DK	Denmark	MD	Republic of Moldova	TT	Trinidad and Tobago
EE	Estonia	MG	Madagascar	UA	Ukraine
ES	Spain	ML	Mali	UG	Uganda
FI	Finland	MN	Mongolia	US	United States of America
FR	France	MR	Mauritania	UZ	Uzbekistan
GA	Gabon			VN	Viet Nam

- 1 -

DescriptionSystem and Method for Conducting  
Cashless Transactions on a Computer NetworkTechnical Field

The present invention relates to a commercial network transaction system and method and particularly to a system and method for conducting commercial transactions of small monetary value on a computer  
5 network without using cash.

Background of the Invention

Many attempts have been made to develop a system whereby the need to carry cash on one's person to make  
10 purchases would be obviated. Two common answers have been the use of credit cards and debit cards. In both cases, the card user can make the purchases without cash, one through the extension of bank credit and the other through an immediate electronic debit of a bank  
15 account. However, both techniques fail to address the need for cashless solutions to small transactions since the processing costs using either technique are too high with regard to the small transactions.

Another technique for conducting cashless  
20 transactions is disclosed in PCT International Publication No. WO 91/16691 published October 13, 1991 and PCT International Publication No. WO 93/08545 published April 29, 1993. The disclosed value transfer system in both publications comprises a computer, a  
25 value meter and a bulk purse within a bank, and exchange devices and electronic purses (e.g., integrated circuit cards or smart cards) outside the bank. In accordance with the disclosure, the bulk purse is capable of having cash values loaded to and

-2-

redeemed by electronic purses via a value meter. The electronic purses communicate with each other through an exchange device to transfer values in transactions which are off-line from the computer. The value meter  
5 keeps float value records for the computer to derive a net value released to the bulk purse. Each float value record is non-specific with regard to individual draw-downs and redemptions.

This prior-art technique has an obvious  
10 disadvantage in that the holder of an electronic purse must connect to a bank via a computer to increase his/her monetary level stored in the electronic purse. Therefore, if a user purchases an item at a merchant's site without sufficient funds in the purse, he/she  
15 ~~could not immediately purchase the item before~~ accessing a computer to further "charge" the purse. Furthermore, the electronic purse is represented in the disclosure as a smart card designed for carrying to merchant terminals for insertion.

20 Over the last several years, businesses have been attracted to the rapidly growing number of personal computer users. More specifically, these businesses have realized the potential customer base of the so-called "on-line users." On-line service providers such  
25 as America Online, CompuServe, and Prodigy have provided easy access to computer networks such that a large captive audience of on-line consumers has emerged.

These on-line service providers have begun to  
30 allow users to use their services as gateways to the expansive international network of networks known as the Internet. The Internet, a series of some 50,000 computer networks around the world, has recently gained substantial popularity due to its promise of providing  
35 connectivity between so many computer users with functionality such as electronic mail, file transfer,

- 3 -

and remote login. The customer base of Internet users, now more than 38 million, will apparently grow to 100 million by 1998 as more businesses discover the marketing opportunities available on the "net." These businesses are especially attracted to the functionality and features of a fairly new Internet service known as the World Wide Web.

The World Wide Web, or Web, provides easier access to Internet information and services. It utilizes the technology called "hypertext" to organize, search and present information on the Internet. A user can select a word ("hypertext word") from a viewed document, and be linked to another document featuring information related to the word. These links are within the Web server domain and result in a progressively deeper search or base of choices. To access the rich environment of hypertext links, graphics, fonts, sound and video, an internet user utilizes a client or Web "browser," such as Mosaic. This browser handles the function of locating and targeting information on the Internet and displaying information provided by a Web server.

In the business arena, a merchant can, with an Internet address and a hypertext editor, develop a first hypertext document called a "home page" (or "virtual storefront") which a user sees when he enters the Web at the merchant's Web server. That home page may provide descriptions of products and services through the use of media such as graphic images, sound, and hypertext link choices. The information allows the consumer to find the product or service he desires to purchase. The result is an easily accessible system for purchasing anything from a journal page and investor advice to travel tickets and golf clubs.

While the business advantages of computer network marketing are clear, the transaction costs may present

- 4 -

a problem, especially when the size of the transaction is small, such as the journal page sale.

Several techniques for creating cashless commercial transactions exist for sales over networks such as the Internet. The most common technique involves the use of credit cards where credit is extended to a cardholder by a financial institution to cover purchases from participating merchants. The financial institution pays the merchant the purchase price less a service charge fee and later bills the cardholder for the purchase price.

Such credit card transactions, however, require calling a processing center to obtain authorization for the transactions. This incurs transaction costs as described above, which while acceptable for large purchases, are not cost effective for relatively small purchases (e.g., a journal page). Furthermore, it is not practical for financial institutions to engage in discrete posting of these small transactions.

Another system that allows for purchases without the use of cash is a debit system such as NetBill. In this system, a large server maintains accounts for both merchants and consumers. These NetBill accounts are linked with conventional financial institutions. When a consumer chooses to purchase goods or services from a merchant, a NetBill transaction is commenced in which the product or service is transferred, if possible, e.g., a journal page, the consumer's account is debited, and the merchant's account is credited. When necessary, funds in the consumer's NetBill account can be replenished by electronic transfer from a bank or by credit card. Also, funds in the merchant's NetBill account are made available by depositing the funds in the merchant's bank account.

Disadvantages associated with a debit system such as NetBill stem from the fact that the NetBill server

- 5 -

comprises a central computer which must handle every transaction. Because of this requirement, the server's critical CPU time is depleted. Thus, when there is high sales volume, delays in transactions are common and caused by the busy central computer and possibly long-haul transmission of transaction data to the computer. In addition, the merchant must pay for the long-haul transmission to the central computer for each transaction. Finally, because a consumer's account funds reside in the central database of the computer, any breakdown of the central computer, communication or otherwise, would eliminate the ability of the consumer to complete transactions.

Accordingly, it is desirable to have a cost-effective system whereby a computer user can conduct transactions of relatively small values over a computer network by the use of funds located in the local computer, without worrying whether a debit card account has sufficient funds, and without significant delays caused by interruptions for verification, authorization, and/or obtaining additional funds in the account.

#### Summary of the Invention

The present invention overcomes the prior art limitations by including a mechanism for directing the transfer of funds into an electronic purse built into a local computer to be used for purchases on a network. The mechanism also provides for reloading the purse when necessary to complete a transaction. Thus, with the invention, the user is permitted to conduct a transaction on a computer network, e.g., the Internet, and to increase the funds in the electronic purse (or the balance of an account on the local computer) to cover the transaction price if the price exceeds the balance. Advantageously, the user, while conducting

- 6 -

the on-line transactions, is not required to get off-line to increase the funds in his/her account. In accordance with an additional aspect of the invention, the user's computer stores the transaction information in its memory for recordation purposes.

The inventive system preferably includes (1) a user's computer with associated software, (2) a merchant computer which conducts transactions with the user's computer, and (3) a computer maintained by a financial service provider (FSP) which can read, compare, and write back data to the user's computer.

The FSP defines the present cashless transaction service features and requirements, and overlooks the service. In accordance with the invention, a user acquires cashless transaction software provided by the FSP which may also be distributed as part of a network operating system package. Each individual software package will have a unique account number associated with it. Having loaded the software on his/her PC, the user is prompted through an initialization and load process wherein the user provides the FSP with personal information and identifies issuer banks with which the user would like to be registered. The FSP then may make an amount of funds, e.g. \$25, available to the user computer, in a secure fashion, for use in future computer network transactions. The FSP, at some later time, settles with the user's issuer bank which bills the user for the amount of the load.

The user may, thereafter, use his computer to complete a cashless network transaction of a relatively small amount. For example, to purchase several pages of an article from a document service on the Internet, the user may go onto the network, e.g., the Web, and make a purchase of the pages for \$3. The merchant computer will register the sale and the amount of the transaction will be deducted from the balance on the



- 7 -

user's computer. This transaction will be stored in the user computer's memory. If the balance on the computer is less than the transaction amount, the user may be given the option to reload the account which  
5 increases the account balance on his/her computer. The reload may be programmed to be selected by the user or automatic. For example, if the user has only a \$1.00 balance in his/her electronic purse and the transaction amount is \$1.50, after the reload is performed, the  
10 user's purse may be increased by an amount, e.g., \$25.00. The new user balance will be \$24.50, taking into account the amount previously remaining in the account and the transaction amount. Preferably, each reload amount is limited by a maximum and minimum  
15 amount value.

Upon reload, the issuer bank is informed by the FSP of the reload and bills the user for the increase. Preferably, the issuer bank simultaneously transfers electronically the amount to the FSP which places the  
20 increased amount into a separate account out of which the amount of the transaction is withdrawn. That separate account referred to as a "pooled account" or a "float" holds all outstanding prepaid revenues for all users of the issuer bank. The FSP maintains a database  
25 of all such pooled accounts and their outstanding balances. If no transaction has been made for a specified period of time, the FSP may direct the issuer bank to reimburse a particular user for his or her unspent balance. In addition, the user may request, at  
30 any time, a credit of the unspent balance.

In accordance with an aspect of the invention, at the end of each day, a merchant downloads data on each transaction of the day onto a tape and transmits the tape to the FSP electronically or off-line. The tape  
35 contains merchant identification and transaction information. Alternatively, the data on the tape may

be transmitted electronically to the FSP computer through a communication link, without using the tape itself. After updating the database by deducting the transaction amounts from the pooled accounts, the FSP electronically transfers the total transaction amount, possibly less a transaction fee, to an acquirer bank with which the merchant has an account. The acquirer bank then distributes the funds, possibly less another transaction fee, to the merchant's account.

10

#### Brief Description of the Drawings

Further objects, features and advantages of the invention will become apparent from the following detailed description taken in conjunction with the accompanying figures showing a preferred embodiment of the invention, in which:

15

Fig. 1 illustrates a cashless transaction system comprising a computer network connecting a user computer, an FSP computer and a merchant computer in accordance with the invention;

20

Fig. 2 is a memory map of memory space provided in the user computer of Fig. 1;

Fig. 3 is a schematic diagram of the merchant computer of Fig. 1;

25

Fig. 4 is a memory map of memory space provided in the merchant computer of Fig. 3;

Fig. 5 is a flow chart illustrating a process for conducting a cashless transaction in accordance with one embodiment of the invention;

30

Fig. 6 illustrates the connections between the FSP computer and an issuer computer together with an acquirer computer in accordance with the invention;

Fig. 7A is a flow chart illustrating a process in the FSP computer of Figs. 1 and 6;

35

Fig. 7B is a flow chart illustrating a process in the issuer computer of Fig. 6;

Fig. 7C is a flow chart illustrating a second process in the FSP computer of Figs. 1 and 6;

Fig. 8 is a flow chart illustrating a process for refunding a user for unused funds in an account in accordance with an aspect of the invention; and

Fig. 9 illustrates a monthly bill reflecting fund increases to the user account by the system of Fig. 1.

Throughout the figures, the same reference numerals and characters, unless otherwise stated, are used to denote like features, elements, components or portions of the illustrated embodiment. Moreover, while the subject invention will now be described in detail with reference to the figures, it is done so in connection with a preferred embodiment. It is intended that changes and modifications can be made to the described embodiment without departing from the true scope and spirit of the subject invention as defined by the appended claims.

## Detailed Description

The present invention is directed to a technique for conducting cashless transactions on a computer network, e.g., the Internet. In Figure 1, computer 100, a conventional personal computer, is employed by a user to access Internet network 110 via a dial-up link to conduct the cashless transaction in accordance with the invention. Since Internet network 110 is a packet-switched network wherein messages may be routed through many different nodes before reaching their destinations, a substantial risk of having the messages intercepted on the Internet arises. To eliminate such risk, a well-known encryption technique such as private key cryptology, e.g., the Data Encryption Standard (DES), or public key cryptology, e.g., the RSA algorithm, is used to provide secure encryption and decryption for data transmission over network 110.

-10-

Named after its developers, Rivest, Shamir, and Adelman, the RSA algorithm uses a private key and a public key to encrypt and decrypt messages. The keys are generated mathematically in part by combining prime  
5 numbers. For details on the RSA algorithm and its application, one may refer to U.S. Patent No. 4,405,829 issued September 20, 1983 to Rivest et al., which is hereby incorporated by reference.

Computer 100 contains, inter alia, memory 101 for  
10 storing data to be described, microprocessor 103, modem 105 for establishing the dial-up link to network 110, and display 107. Also connected to network 110 are FSP computer 601 and merchant computer 300. Computer 100 is loaded with FSP cashless transaction software, to be  
15 ~~described, preferably for conducting small purchases in~~ lieu of cash on network 110. Computer 100 carries an account balance, or electronic purse, from which the price of the purchase or transaction is deducted. It incorporates a reload feature which permits the user to  
20 increase the account balance when the purchase price exceeds the running balance. The reload may be in a predetermined amount or limited by a maximum amount. Preferably, the maximum or predetermined amount should be of a relatively small monetary value, e.g. \$25, so  
25 as not to create significant liabilities arising from possible fraudulent uses by so-called "computer hackers." By allowing a small number of reloads of a relatively small amount for a limited time period, one can effectively control and contain such liabilities.  
30 Furthermore, a minimum amount for each reload is preferable so that the transaction is cost-effective to the FSP.

Each copy of the FSP cashless transaction software has a unique account number associated with it. Once  
35 the software is installed on computer 100, the software prompts the user through an initialization process in

-11-

which the user enters personal information such as the name, address, telephone, social security number, etc. and designates an issuer bank which bills the user for the initial loading and subsequent increases to the user account. All such information is forwarded to the FSP over network 110 in a secure encrypted format as described above. After a predetermined period sufficient to check the user's information, the user may request a load on his/her account from the FSP. To this end, the user again communicates with the FSP computer over network 110. If the user has been approved, this load request is granted and the user account will be loaded with an initial amount, e.g., \$25. The request grant is then communicated to the issuer bank which bills the user for the initial load. The FSP then requests the same amount from the user's issuer bank or accounts for the amount, preferably placing the funds in a pooled account with all outstanding prepayments from all users. Thus, if the FSP funds 200 accounts with \$25 each, the pooled account will equal \$5,000.

Fig. 2 depicts a memory map of data storage in memory 101. The memory map identifies various memory modules including identification module 250 containing data on an account number, an expiration date, a personal identification number (PIN) and a maximum number of PIN entry attempts; transaction module 255 containing purchase data such as last date and time of purchase, duration since last purchase, amount of purchase and a "credit back" period; and accounting module 259 containing the balance data, the outstanding number of reloads, and a predetermined "maximum number of reloads." All this data is used to identify the account, operate the system, and track the purchase after a transaction is completed.

- 12 -

Specifically, the account number identifies the account associated with computer 100 for billing purposes. The expiration date is used to make sure the account is unexpired. The PIN is used to verify the account ownership in a conventional manner. The maximum number of PIN entry attempts is the number of incorrect tries allowed to verify the user before further use is disallowed. The date and time of purchase keeps track of the date and time of the last transaction. The duration value indicates the duration of non-use of the account, which is tracked using an internal timer (not shown) of computer 100. As described below, a "credit back" period is selected by the user from a set of predetermined time periods, e.g., 0, 30, 60, 90 days or until the account expires. If computer 100 is not used during the credit back period, the account balance is automatically refunded to the user. In the present embodiment, the "credit back" or "non-use" time period selected is 90 days. The period may be preselected or altered by the user at computer 100.

The "number of reloads" portion of accounting module 259 in memory 101 corresponds to the number of reloads remaining. The "maximum number of reloads" is the maximum number of reloads allocated to the user. Preferably, if the maximum number is zero, the user will not be able to use the reload feature. Setting the maximum number allows the FSP and issuer bank to control the spending limit of each account.

Figure 3 is a block diagram of merchant computer 300. Merchant computer 300 contains, inter alia, microprocessor 301, memory 306 and operating circuitry 309. The latter includes capabilities of transmitting and receiving data to and from network 110 pursuant to the standard Internet protocols and in a secure encrypted format as described above.

-13-

Fig. 4 depicts a memory map of data storage in memory 306 of merchant computer 300 which is of a conventional design. The memory map identifies two modules. Transaction module 401 records purchases made with computer 100 and other user computers subscribing to the present service. Information in transaction module 401 preferably contains a record for each purchase including an account number, amount of purchase, date of purchase, and account balance. Identification module 403 includes information about the merchant's name and account number associated with an acquirer bank with which the merchant has an account.

Fig. 5 is a flow chart illustrating a process within the FSP cashless transaction software to conduct the cashless transactions with the reload feature in accordance with the invention. Using computer 100, the user accesses network 110 and may browse through hypertext documents provided by merchant computer 300 connected to network 110. These hypertext documents, starting at the home page, describe the products and services offered by the merchant as well as their associated prices. These hypertext documents may contain multimedia information such as images of products. If the user finds a product that he wishes to purchase at the price shown, he may hit a particular key on a keyboard (not shown) of computer 100 or choose a particular hypertext graphic with mouse or a pointing device (not shown) of computer 100 that begins the purchase process. In this example, the user selects a \$1 journal page from an article for the purchase.

The process starts in step 501 where a message is displayed on display 107 of computer 100 requesting the user to enter his PIN to identify himself/herself as the owner of the cashless transaction software. When a PIN is entered on the computer 100 keyboard, the number

-14-

is checked against the PIN stored in memory 201 of computer 100. If the numerical sequences are different, computer 100 asks for the PIN again in case it was mistyped or partially forgotten. The user is  
5 allowed to have a maximum number of attempts which is stored on computer 100, in this case three attempts, in order to enter the correct PIN before the purchase request is rejected.

If, in step 502, the PIN number stored in memory  
10 101 matches any one of the up to three numbers entered, the transaction continues to step 503. Otherwise, the process ends.

In step 503, microprocessor 101 in computer 100 compares the duration value in memory 101 with the  
15 ~~credit back period, 90 days, in memory 101.~~ In accordance with an aspect of the invention, FSP computer 601 reimburses the user for the unused account balance on computer 100 if computer 100 is not used in  
20 a 90 day period. The account balance on computer 100 is therefore assumed to have been credited back to the user after the 90 day period in accordance with the invention. With this assumption, the account balance portion of accounting module 259 of memory 101 in  
25 computer 100 is reset to a zero value in step 505. After this step, or if 90 days have not passed since the last transaction, the account balance stored in computer 100 is displayed on display 107, as indicated in step 507. Also displayed is a message asking the  
30 user to specify whether he/she wants to make the purchase, reload the account balance, obtain a credit of the existing account balance, or exit the process. The user then depresses a key on the keyboard or clicks with a mouse on the icon associated with these choices, sending a message to microprocessor 103.

35 In step 508, if computer 100 detects that the user chose the credit option, the FSP computer initiates a



-15-

credit as explained below and the process continues in step 505. If not, the process continues in step 509.

In step 509, if computer 100 detects that the user chose the exit option, the process ends. Otherwise,  
5 the process continues in step 510 wherein a message is received from merchant computer 300 indicating the price of the product or service chosen by the user. If, in step 511, computer 100 detects that the user, having recognized that the account balance is less than  
10 the price of the product, chose the reload option, specifying a desired reload amount, the process continues in step 513.

Alternatively, the system could have an automatic reload feature. For example, the balance could be  
15 automatically increased by a predetermined sum each time the user's account balance is less than that value needed to make a purchase. To this end, when the user enters the purchase process, he/she is not presented with an option to reload. Rather, computer 100  
20 automatically attempts to reload by a predetermined sum when the purchase price received from merchant computer 300 exceeds the account balance.

In step 513, microprocessor 101 in computer 100 again compares the duration value in memory 101 with  
25 the credit-back period in memory 101. If the duration value exceeds the credit-back period, the process continues in step 515. If not, the process continues in step 517. In step 515, the "maximum number of reloads" value stored in memory 101 is preferably  
30 copied into the "number of reloads" portion of accounting module 259 of computer 100 to allow the user more reloads.

Next, in step 517, the value stored in the number of reloads portion of accounting module 259 in memory  
35 101 of computer 100 is compared to a value of zero. If the value does not equal zero, i.e., computer 100 has

-16-

some remaining reloads, computer 100 is automatically routed to FSP computer 601 and the data stored in memory 101 of computer 100 is sent over network 110 to FSP computer 601.

5 FSP computer 601 determines whether the user account has expired by comparing the expiration date stored in memory 101 of computer 100 with the present date generated by a timer in FSP computer 601. In step 519, if computer 100 receives a message from FSP  
10 computer 601 indicating that the account has expired, the account balance, number of reloads and maximum number of reloads of computer 100 are overwritten in step 540 to become zero and the reload request is rejected. If the message indicates that the account  
15 ~~has not expired, the process goes to step 521.~~

FSP computer 601 also reads the account number from memory 101 of computer 100 and compares it against a list of bad accounts stored in the memory of FSP computer 601. In step 521, if computer 100 receives a  
20 message that the account number matches a number on the bad account list, the card is presumed invalid and the reload request is denied. Again, the account balance of computer 100 is overwritten in step 540 to become zero and the number of reloads and maximum number of  
25 reloads are overwritten to become zero. Also, a value is written in the credit back portion of transaction module 255 of memory 101 which represents that no more reloads will be allowed for the life of the account. The above action renders the account useless with  
30 respect to the cashless system. In the case of the overdue payment, computer 100 can be reactivated when the user pays the arrears. In step 542, suitable information is displayed on display 107, such as "bad account, account deactivated". If the message  
35 indicates that the number does not match a number on the bad account list, the process goes to step 523.

-17-

In step 523, the account balance is incremented by the reload amount (in this example \$25) by computer 100 to allow sufficient funds for the purchase to be made. The "number of reloads" value in memory 101 of computer 100 is reduced by one in step 525 after a reload has been triggered. Record of the reload is stored in FSP computer 601 for later processing. The process continues in step 552 as explained below.

If, in step 517, the number of reloads does equal zero, then the account balance is compared to zero in step 531. If the balance is zero, then the transaction is not allowed to proceed and a message such as "No more reloads permitted - Contact FSP" is displayed at computer 100 in step 533.

In accordance with another aspect of the invention, if the number of reloads equals zero but there is a balance of more than zero in the account, then the transaction is the final one allowed, and the balance is only increased to cover the amount of the purchase. This allows the transaction to be completed and reduces the balance to zero in computer 100. In step 535, the difference between the price and remaining balance is added to the balance to ensure enough funds to purchase the item. The process then skips to 552 described below.

If computer 100 detects, in step 511, that the user chose the purchase option, computer 100, in step 552, analyzes whether the purchase price subtracted from the balance stored in memory 101 results in a negative number. If, in step 552, the resulting balance is a negative number (indicating that the price of the item is greater than the account balance stored in computer 100), a message is displayed, in step 570, informing the user that his account balance is insufficient to purchase the product and that he must request a reload to continue. The process continues in

-18-

step 509 as described above. Alternatively, a reload is automatically processed when the purchase price exceeds the account balance, as indicated above, and the purchase process is continued as described below.

5        If, in step 552, computer 100 determines that the price of the item selected is less than or equal to that of the account balance stored in memory 101, the balance is decreased on computer 100 by the transaction price in step 554. In step 555, information stored in  
10       memory 101 of computer 100 (including account number and account balance) is sent in a secure encrypted form to memory 306 of merchant computer 300 along with a message indicating the purchase. Further, the incremented value stored in computer 100 is decreased  
15       by the price of the item and this new value is written back onto computer 100 in the balance portion of accounting module 259 of memory 101. Finally, a record of the transaction is also stored in the transaction module 255 of memory 101.

20       In step 556, computer 100 displays the new balance. In step 558, the duration value portion of transaction module 255 of memory 101 in computer 100 is overwritten to zero.

      Fig. 6 illustrates connections between FSP  
25       computer 601 and issuer computer 603 and acquirer computer 605. At the close of each day, merchant computer 300 downloads transaction and identification information stored in modules 401 and 403 of memory 306 (including the account number, amount of the  
30       transaction, the last account balance, and merchant name and account number) to a tape. The merchant physically forwards the tape to the FSP for loading the information recorded on the tape onto FSP computer 601. Such information allows FSP computer 601 to identify  
35       the user accounts, merchant and transaction amounts. Alternatively, the transaction information may be sent

-19-

electronically over a communication link in a secure encrypted form as described above. FSP computer 601 processes the information, updates the various floats and transmits the total of the transactions by merchant  
5 (possibly less transaction fees) to acquirer computer 605 via communication link 613 in a secure encrypted form as described above. The acquirer bank then credits the merchant account based on the amounts transacted.

10 Figure 7A shows the process employed in FSP computer 601 upon a reload. In step 701, FSP computer 601 receives data from computer 100 regarding the reload via network 110. In step 703, FSP computer 601 identifies from the transmitted data the account number  
15 of computer 100 and checks the account expiration and bad account list. Assuming the account is valid, FSP computer 601 then transmits reload data information in step 705 to issuer computer 603 via communication link 309 in a secure encrypted form as described above.

20 Figure 7B describes a process employed in issuer computer 603. In step 707, issuer computer 603 receives the data regarding the reload from FSP computer 601. In step 709, issuer computer 603 stores the reload data pertaining to the corresponding account  
25 number. Issuer computer 603 then bills the user for each reload of \$25 incurred during a billing period in step 710. In step 711, issuer computer 603 responsively funds the associated float or pooled account kept in FSP computer 601 for each reload.

30 Figure 7C describes another process in FSP computer 601. In step 713, FSP computer 601 receives the transaction data preferably on tape from merchant computer 300. In step 715, FSP computer 601 analyzes the data, updates the various float accounts and stores  
35 the data in a central database. Finally, in step 717, FSP computer 601 forwards the funds, corresponding to

- 20 -

that of the transaction amount (possibly less a transaction fee) to acquirer computer 605. The acquirer bank then credits the merchant account the total transaction amount recorded at merchant computer 300 possibly less a financial services provider fee.

Fig. 8 describes the credit-back process implemented in FSP computer 601 after a certain period (preferably 90 days) of no activity on the account kept in computer 100. This credit-back process ensures the user does not lose the unspent money on the account. In step 801, FSP computer 601 compares the present date with the date of the last purchase associated with computer 100 stored in its database and determines if the account has not been active for longer than 90 days. If, in step 802, it is determined that the inactivity is not longer than 90 days, FSP computer 601 takes no action. Otherwise, FSP computer 601, in step 803, sends a message to issuer computer 603 via communication link 309 indicating that the account should be credited with its outstanding balance. Also, when a user requests a credit from FSP computer 601, the process is begun in step 803. In step 805, issuer computer 603 credits the user's account with the outstanding balance accordingly. In step 807, FSP computer 601 withdraws the credit-back amount from the float associated with the issuer bank to compensate for the credit.

Fig. 9 illustrates a statement documenting an initial load and subsequent reloads made by the user of computer 100. The statement is sent from issuer computer 603 to the user to provide a record of increases during the billing period and to bill the user for the same. This preferred embodiment details date of load 901 and load amount 903. The statement may be part of the user's regular credit card bill or may be sent only if requested by the user. Further,

-21-

computer 100 provides a function for displaying and printing out a description of the purchases. Upon request by the user, the data in module 255 of memory 101 is written to display 107 or a printer (not shown).

5 This information mirrors the information used by FSP computer 601 to adjust the float accounts as transactions are processed.

The foregoing merely illustrates the principles of the invention. It will thus be appreciated that those skilled in the art will be able to devise numerous systems and methods which, although not explicitly shown or described herein, embody the principles of the invention and are thus within the spirit and scope of the invention.

15 For example, memory 101 could also contain data needed to conduct conventional credit card transactions. In addition, computer 100 could have additional memory modules containing balances for different foreign currencies. This would allow world-  
20 wide utilization of the system by keeping separate balances each of which could be reloaded. The reload value of the foreign currency would likewise be small and preferably in an amount equivalent to U.S. \$25. The memory modules could contain associated "credit  
25 back" memory locations to allow different time periods for credit-backs for each foreign currency. The memory modules could also contain individual "maximum number of reloads" and "number of reloads remaining" portions of accounting modules associated with each currency.

30 In addition, it may be desirable to remove the above described feature of forcing the last transaction to completion. That is, the system prevents the transaction whenever the number of reloads is zero and the balance is less than the price of the desired items  
35 regardless of whether the balance is non-zero. This would remove the feature of covering the last

- 22 -

transaction described above but would make the system easier to implement.

Finally, the present invention has been described and disclosed in a form in which the various system  
5 functions are performed by discrete functional blocks. However, any one or more of these functions could equally well be performed by one or more appropriately programmed microprocessors, micro-coded chips, etc.



Claims

- 1 1. Apparatus for conducting cashless transactions on  
2 a network, comprising:  
3 means for selecting a cashless transaction to  
4 be conducted on said network;  
5 means for receiving, from said network, first  
6 data including an amount required to complete the  
7 selected cashless transaction;  
8 means for storing second data representative  
9 of an available fund; and  
10 means for applying said available fund toward  
11 said selected cashless transaction and reducing  
12 said available fund in completing said  
13 transaction.
- 1 2. The apparatus of claim 1 further comprising means  
2 for providing an option to increase said available  
3 fund when said available fund is less than the  
4 required amount, to complete said selected  
5 cashless transaction.
- 1 3. The apparatus of claim 1 wherein said network is a  
2 computer network.
- 1 4. The apparatus of claim 3 wherein said computer  
2 network is an Internet network.
- 1 5. The apparatus of claim 1 wherein said selected  
2 cashless transaction comprises a purchase of a  
3 selected item, said apparatus further comprising  
4 means for browsing information about said selected  
5 item.

-24-

- 1     6.     The apparatus of claim 5 wherein said information  
2           is multimedia information including an image of  
3           said selected item.
- 1     7.     The apparatus of claim 1 further comprising means  
2           for accessing said network.
- 1     8.     The apparatus of claim 7 wherein said accessing  
2           means includes a dial-up modem.
- 1     9.     The apparatus of claim 1 further comprising means  
2           for executing said selected cashless transaction.
- 1     10.    The apparatus of claim 1 further comprising:  
2           means for providing third data representative  
3           of a maximum number of increases allowed;  
4           means for tallying each occurrence of an  
5           increase in said available fund; and  
6           means for ensuring that the tallied number of  
7           increases is not greater than said maximum number.
- 1     11.    The apparatus of claim 1 further comprising means  
2           for providing third data representative of a  
3           selected period of inactivity, said available fund  
4           being redeemable after said period expires.
- 1     12.    Apparatus for conducting cashless transactions on  
2           a network, comprising:  
3           means for selecting a cashless transaction to  
4           be conducted on said network;  
5           means for receiving, from said network, first  
6           data representative of an amount required to  
7           complete the selected cashless transaction;  
8           means for storing second data representative  
9           of an available fund;

-25-

10 means for applying said available fund toward  
11 said cashless transaction; and  
12 means for automatically increasing said  
13 available fund by a predetermined sum when said  
14 available fund is less than the required amount,  
15 to enable the completion of said selected cashless  
16 transaction.

1 13. The apparatus of claim 12 wherein said network is  
2 a computer network.

1 14. The apparatus of claim 13 wherein said computer  
2 network is an Internet network.

1 15. The apparatus of claim 12 wherein said selected  
2 cashless transaction comprises a purchase of a  
3 selected item, said apparatus further comprising  
4 means for browsing information about said selected  
5 item.

1 16. The apparatus of claim 15 wherein said information  
2 is multimedia information including an image of  
3 said selected item.

1 17. The apparatus of claim 12 further comprising means  
2 for accessing said network.

1 18. The apparatus of claim 17 wherein said accessing  
2 means includes a dial-up modem.

1 19. The apparatus of claim 12 further comprising means  
2 for executing said selected cashless transaction.

1 20. The apparatus of claim 12 further comprising:  
2 means for providing third data representative  
3 of a maximum number of increases allowed;

-26-

4 means for tallying each occurrence of an  
5 increase in said available fund; and  
6 means for ensuring that the tallied number of  
7 increases is not greater than said maximum number.

1 21. The apparatus of claim 12 further comprising means  
2 for providing third data representative of a  
3 selected period of inactivity, said available fund  
4 being redeemable after said period expires.

1 22. A system for extending funds to an account having  
2 a limited fund to conduct a cashless transaction  
3 on a network, comprising:

4 means for receiving from said network a  
5 request for an increase in said limited fund when  
6 said limited fund is insufficient to complete said  
7 cashless transaction, said increase equal to a  
8 predetermined reload sum;

9 means for granting said request;

10 means responsive to the granted request for  
11 increasing said limited fund by said reload sum;

12 means for registering the granted request for  
13 said increase; and

14 means for billing said account for an amount  
15 which is a function of a total number of said  
16 requests and said reload sum.

1 23. The system of claim 22 wherein said network is a  
2 computer network.

1 24. The system of claim 23 wherein said computer  
2 network is an Internet network.

1 25. The system of claim 22 wherein said request  
2 includes data representative of an identification  
3 of said account, said system further comprising:

- 27 -

4 means for storing a list of selected account  
5 identifications;

6 means for comparing said account  
7 identification against said list; and

8 means for determining whether said account  
9 identification is within said list.

1 26. The system of claim 25 further comprising means  
2 for rejecting said request and disallowing  
3 completion of any cashless transaction when said  
4 account identification is determined to be within  
5 said list.

1 27. The system of claim 22 further comprising:  
2 means for comparing a date of said  
3 transaction and an expiration date associated with  
4 said account; and  
5 means for rejecting said request and  
6 disallowing completion of any cashless transaction  
7 if said account expires.

1 28. The system of claim 22 wherein upon said billing  
2 said reload sum is added to a pooled account.

1 29. The system of claim 28 further comprising means  
2 for reimbursing an available fund in said account  
3 out of said pooled account.

1 30. A system for extending funds to an account having  
2 a limited fund to conduct a cashless transaction  
3 on a network, comprising:  
4 means for receiving, from said network, a  
5 signal indicating that said limited fund is  
6 insufficient to complete said cashless  
7 transaction; and

-28-

8 means responsive to said signal for  
9 automatically increasing said limited fund in said  
10 account by a predetermined sum to enable the  
11 completion of said cashless transaction.

1 31. The system of claim 30 wherein said network is a  
2 computer network.

1 32. The system of claim 31 wherein said computer  
2 network is an Internet network.

1 33. The system of claim 30 wherein said signal  
2 includes data representative of an identification  
3 of said account, said system further comprising:  
4 means for storing a list of selected account  
5 identifications;  
6 means for comparing the account  
7 identification against said list; and  
8 means for determining whether said account  
9 identification is within said list.

1 34. The system of claim 33 further comprising means  
2 for disallowing completion of any cashless  
3 transaction when said account identification is  
4 determined to be within said list.

1 35. The system of claim 30 further comprising:  
2 means for comparing a date of said  
3 transaction and an expiration date associated with  
4 said account; and  
5 means for disallowing completion of any  
6 cashless transaction if said account expires.

1 36. The system of claim 30 further comprising:  
2 means for tallying a total number of  
3 automatic increases in said account; and

4           means for billing said account for an amount  
5           which is a function of said total number of  
6           automatic increases and said predetermined sum.

1   37.   The system of claim 36 wherein upon said billing  
2           said predetermined sum is added to a pooled  
3           account.

1   38.   The system of claim 37 further comprising means  
2           for reimbursing an available fund in said account  
3           out of said pooled account.

1   39.   A system for a system user to conduct purchases on  
2           a network, comprising:  
3                means for selecting at least one item to  
4           purchase on said network;  
5                means for providing for said user first data  
6           representative of a price of the selected item;  
7                means for providing for said user second data  
8           representative of an available fund in an account  
9           of said user for conducting said purchases;  
10               means for executing said purchase; and  
11               means for recording information on said  
12           purchase and said account after said purchase is  
13           executed.

1   40.   The system of claim 39 further comprising means  
2           for providing an option to increase said available  
3           fund when said price is greater than said  
4           available fund, to allow consummation of the  
5           purchase of the selected item.

1   41.   The system of claim 39 wherein said network is a  
2           computer network.

- 1 42. The system of claim 41 wherein said computer  
2 network is an Internet network.
- 1 43. The system of claim 39 further comprising means  
2 for browsing second information about the selected  
3 item to purchase.
- 1 44. The system of claim 43 wherein said second  
2 information is multimedia information including an  
3 image of said selected item.
- 1 45. The system of claim 39 further comprising:  
2 means for providing third data representative  
3 of a maximum number of increases allowed;  
4 means for tallying each occurrence of an  
5 increase in said available fund; and  
6 means for ensuring the tallied number of  
7 increases being not greater than said maximum  
8 number.
- 1 46. The system of claim 39 further comprising means  
2 for providing third data representative of a  
3 selected period of inactivity, said available fund  
4 being redeemable after said period expires.
- 1 47. The system of claim 39 further comprising:  
2 means for maintaining a pooled account; and  
3 means for reducing the pooled account by an  
4 amount which is a function of said price after  
5 said purchase is consummated.
- 1 48. A system for a system user to conduct purchases on  
2 a network, comprising:  
3 means for selecting at least one item to  
4 purchase on said network;



-31-

5 means for providing first data representative  
6 of a price of the selected item;  
7 means for providing second data  
8 representative of an available fund in an account  
9 of said user for conducting said purchases; and  
10 means for automatically increasing said  
11 available fund by a predetermined sum when said  
12 price is higher than said available fund, to allow  
13 consummation of the purchase of the selected item.

1 49. The system of claim 48 wherein said network is a  
2 computer network.

1 50. The system of claim 49 wherein said computer  
2 network is an Internet network.

1 51. The system of claim 48 further comprising means  
2 for browsing information about the selected item  
3 to purchase.

1 52. The system of claim 48 wherein said information is  
2 multimedia information including an image of said  
3 selected item.

1 53. The system of claim 48 further comprising:  
2 means for providing third data representative  
3 of a maximum number of increases allowed;  
4 means for tallying each occurrence of an  
5 increase in said available fund; and  
6 means for ensuring the tallied number of  
7 increases being not greater than said maximum  
8 number.

1 54. The system of claim 48 further comprising means  
2 for providing third data representative of a

3       selected period of inactivity, said available fund  
4       being redeemable after said period expires.

1   55.   The system of claim 48 further comprising means  
2       for recording information on said purchase and  
3       said account when said purchase is consummated.

1   56.   The system of claim 48 further comprising:  
2       means for maintaining a pooled account; and  
3       means for reducing the pooled account by an  
4       amount which is a function of said price after  
5       said purchase is consummated.

1   57.   A method for conducting cashless transactions on a  
2       network, comprising the steps of:  
3       selecting a cashless transaction to be  
4       conducted on said network;  
5       receiving, from said network, first data  
6       including an amount required to complete the  
7       selected cashless transaction;  
8       storing second data representative of an  
9       available fund; and  
10       applying said available fund toward said  
11       selected cashless transaction and reducing said  
12       available fund in completing said transaction.

1   58.   The method of claim 57 further comprising the step  
2       of providing an option to increase said available  
3       fund when said available fund is less than the  
4       required amount, to enable the completion of said  
5       selected cashless transaction.

1   59.   The method of claim 57 wherein said network is a  
2       computer network.

-33-

- 1 60. The method of claim 59 wherein said computer  
2 network is an Internet network.
- 1 61. The method of claim 57 wherein said selected  
2 cashless transaction comprises a purchase of a  
3 selected item, said method further comprising the  
4 step of browsing information about said selected  
5 item.
- 1 62. The method of claim 61 wherein said information is  
2 multimedia information including an image of said  
3 selected item.
- 1 63. The method of claim 57 further comprising the step  
2 of accessing said network.
- 1 64. The method of claim 63 wherein said accessing step  
2 includes the step of establishing a dial-up link.
- 1 65. The method of claim 57 further comprising the step  
2 of executing said selected cashless transaction.
- 1 66. The method of claim 57 further comprising the  
2 steps of:  
3 providing third data representative of a  
4 maximum number of increases allowed;  
5 tallying each occurrence of an increase in  
6 said available fund; and  
7 ensuring the tallied number of increases  
8 being not greater than said maximum number.
- 1 67. The method of claim 57 further comprising the step  
2 of providing third data representative of a  
3 selected period of inactivity, said available fund  
4 being redeemable after said period expires.

- 1 68. A method for conducting cashless transactions on a  
2 network, comprising the steps of:  
3 selecting a cashless transaction to be  
4 conducted on said network;  
5 receiving, from said network, first data  
6 representative of an amount required to complete  
7 the selected cashless transaction;  
8 storing second data representative of an  
9 available fund;  
10 means for applying said available fund toward  
11 said cashless transaction; and  
12 automatically increasing said available fund  
13 by a predetermined sum when said available fund is  
14 less than the required amount, to enable the  
15 completion of said selected cashless transaction.
- 1 69. The method of claim 68 wherein said network is a  
2 computer network.
- 1 70. The method of claim 69 wherein said computer  
2 network is an Internet network.
- 1 71. The method of claim 68 wherein said selected  
2 cashless transaction comprises a purchase of a  
3 selected item, said method further comprising the  
4 step of browsing information about said selected  
5 item.
- 1 72. The method of claim 71 wherein said information is  
2 multimedia information including an image of said  
3 selected item.
- 1 73. The method of claim 68 further comprising the step  
2 of accessing said network.

-35-

1 74. The method of claim 73 wherein said accessing step  
2 includes the step of establishing a dial-up link.

1 75. The method of claim 68 further comprising the step  
2 of executing said selected cashless transaction.

76. The method of claim 68 further comprising the  
steps of:

providing third data representative of a  
maximum number of increases allowed;

tallying each occurrence of an increase in  
said available fund; and

ensuring the tallied number of increases  
being not greater than said maximum number.

1 77. The method of claim 68 further comprising the step  
2 of providing third data representative of a  
3 selected period of inactivity, said available fund  
4 being redeemable after said period expires.

1 78. A method for extending funds to an account having  
2 a limited fund to conduct a cashless transaction  
3 on a network, comprising the steps of:  
4 receiving from said network a request for an  
5 increase in said limited fund when said limited  
6 fund is insufficient to complete said cashless  
7 transaction, said increase equal to a reload sum;  
8 granting said request;  
9 increasing, in response to the granted  
10 request, said limited fund by said reload sum;  
11 registering said granted request for said  
12 increase; and  
13 billing said account for an amount which is a  
14 function of the total number of said requests and  
15 said reload sum.

- 1 79. The method of claim 78 wherein said network is a  
2 computer network.
- 1 80. The method of claim 79 wherein said computer  
2 network is an Internet network.
- 1 81. The method of claim 78 wherein said request  
2 includes data representative of an identification  
3 of said account, said method further comprising  
4 the steps of:  
5 storing a list of selected account  
6 identifications;  
7 comparing said account identification against  
8 said list; and  
9 determining whether said account  
10 identification is within said list.
- 1 82. The method of claim 81 further comprising the step  
2 of rejecting said request and disallowing  
3 completion of any cashless transaction when said  
4 account identification is determined to be within  
5 said list.
- 1 83. The method of claim 78 further comprising the  
2 steps of:  
3 comparing a date of said transaction and an  
4 expiration date associated with said account; and  
5 rejecting said request and disallowing  
6 completion of any cashless transaction if said  
7 account expires.
- 1 84. The method of claim 78 wherein upon said billing  
2 said reload sum is added to a pooled account.

1 85. The method of claim 84 further comprising the step  
2 of reimbursing an available fund in said account  
3 out of said pooled account.

1 86. A method for extending funds to an account having  
2 a limited fund to conduct a cashless transaction  
3 on a network, comprising the steps of:  
4 receiving, from said network, a signal  
5 indicating that said limited fund is insufficient  
6 to complete said cashless transaction; and  
7 automatically increasing, in response to said  
8 signal, said limited fund in said account by a  
9 predetermined sum to enable the completion of said  
10 cashless transaction.

1 87. The method of claim 86 wherein said network is a  
2 computer network.

1 88. The method of claim 87 wherein said computer  
2 network is an Internet network.

1 89. The method of claim 86 wherein said signal  
2 includes data representative of an identification  
3 of said account, said method further comprising  
4 the steps of:  
5 storing a list of selected account  
6 identifications;  
7 comparing the account identification against  
8 said list; and  
9 determining whether said account  
10 identification is within said list.

1 90. The method of claim 89 further comprising the step  
2 of disallowing completion of any cashless  
3 transaction when said account identification is  
4 determined to be within said list.

- 1 91. The method of claim 86 further comprising the  
2 steps of:  
3 comparing a date of said transaction and an  
4 expiration date associated with said account; and  
5 disallowing completion of any cashless  
6 transaction if said account expires.
- 1 92. The method of claim 86 further comprising the  
2 steps of:  
3 tallying a total number of automatic  
4 increases in said account; and  
5 billing said account for an amount which is a  
6 function of said total number of automatic  
7 increases and said predetermined sum.
- 1 93. The method of claim 92 wherein upon said billing  
2 said predetermined sum is added to a pooled  
3 account.
- 1 94. The method of claim 93 further comprising the step  
2 of reimbursing an available fund in said account  
3 out of said pooled account.
- 1 95. A method for a user to conduct purchases on a  
2 network, comprising the steps of:  
3 selecting at least one item to purchase on  
4 said network;  
5 providing for said user first data  
6 representative of a price of the selected item;  
7 providing for said user second data  
8 representative of an available fund in an account  
9 of said user for conducting said purchases;  
10 executing said purchase; and  
11 recording information on said purchase and  
12 said account after said purchase is executed.



1 96. The method of claim 95 further comprising the step  
2 of providing an option to increase said available  
3 fund when said price is higher than said available  
4 fund to allow consummation of the purchase of the  
5 selected item.

1 97. The method of claim 95 wherein said network is a  
2 computer network.

1 98. The method of claim 97 wherein said computer  
2 network is an Internet network.

1 99. The method of claim 95 further comprising the step  
2 of browsing second information about the selected  
3 item to purchase.

1 100. The method of claim 99 wherein said second  
2 information is multimedia information including an  
3 image of said selected item.

1 101. The method of claim 95 further comprising the  
2 steps of:  
3 providing third data representative of a  
4 maximum number of increases allowed;  
5 tallying each occurrence of an increase in  
6 said available fund; and  
7 ensuring the tallied number of increases  
8 being not greater than said maximum number.

1 102. The method of claim 95 further comprising the step  
2 of providing third data representative of a  
3 selected period of inactivity, said available fund  
4 being redeemable after said period expires.

1 103. The method of claim 95 further comprising the  
2 steps of:  
3 maintaining a pooled account; and  
4 reducing the pooled account by an amount  
5 which is a function of said price after said  
6 purchase is consummated.

1 104. A method for a user to conduct purchases on a  
2 network, comprising the steps of:  
3 selecting at least one item to purchase on  
4 said network;  
5 providing first data representative of a  
6 price of the selected item;  
7 providing second data representative of an  
8 available fund in an account of said user for  
9 conducting said purchases; and  
10 automatically increasing said available fund  
11 by a predetermined sum when said price is higher  
12 than said available fund to allow consummation of  
13 the purchase of the selected item.

1 105. The method of claim 104 wherein said network is a  
2 computer network.

1 106. The method of claim 105 wherein said computer  
2 network is an Internet network.

1 107. The method of claim 104 further comprising the  
2 step of browsing information about the selected  
3 item to purchase.

1 108. The method of claim 107 wherein said information  
2 is multimedia information including an image of  
3 said selected item.

- 41 -

- 1 109. The method of claim 104 further comprising the  
2 steps of:  
3 providing third data representative of a  
4 maximum number of increases allowed;  
5 tallying each occurrence of an increase in  
6 said available fund; and  
7 ensuring the tallied number of increases  
8 being not greater than said maximum number.
- 1 110. The method of claim 104 further comprising the  
2 step of providing third data representative of a  
3 selected period of inactivity, said available fund  
4 being redeemable after said period expires.
- 1 111. The method of claim 104 further comprising the  
2 step of recording information on said purchase and  
3 said account when said purchase is consummated.
- 1 112. The method of claim 111 further comprising the  
2 steps of:  
3 maintaining a pooled account; and  
4 reducing the pooled account by an amount  
5 which is a function of said price after said  
6 purchase is consummated.

1/7

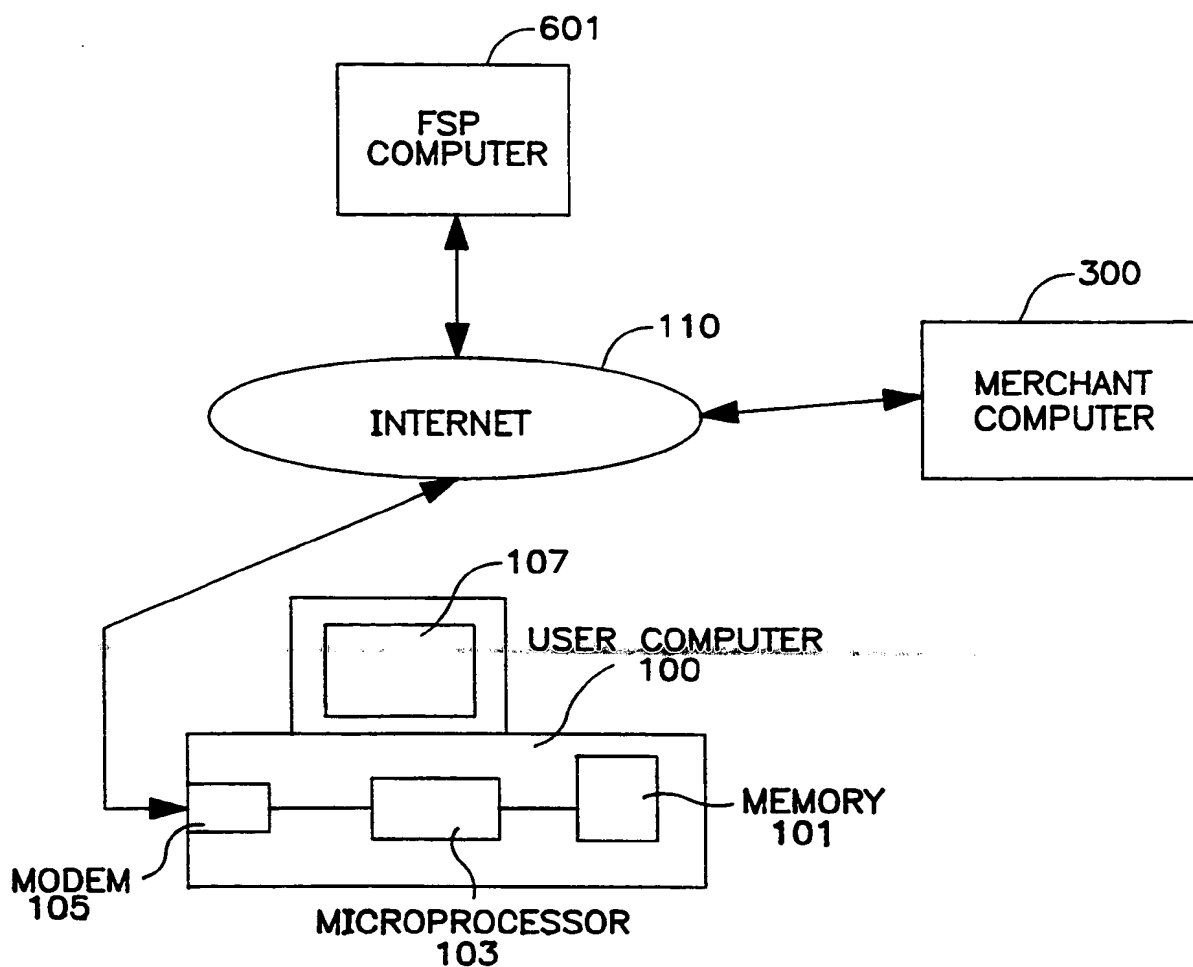


FIG. 1

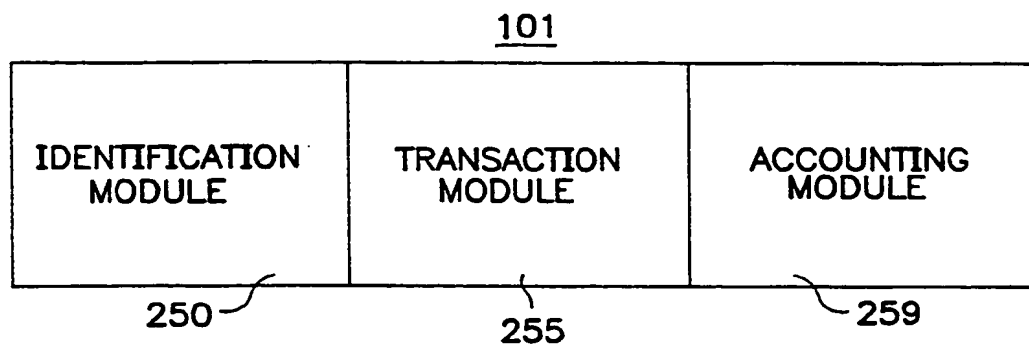


FIG. 2

SUBSTITUTE SHEET (RULE 26)

2/7

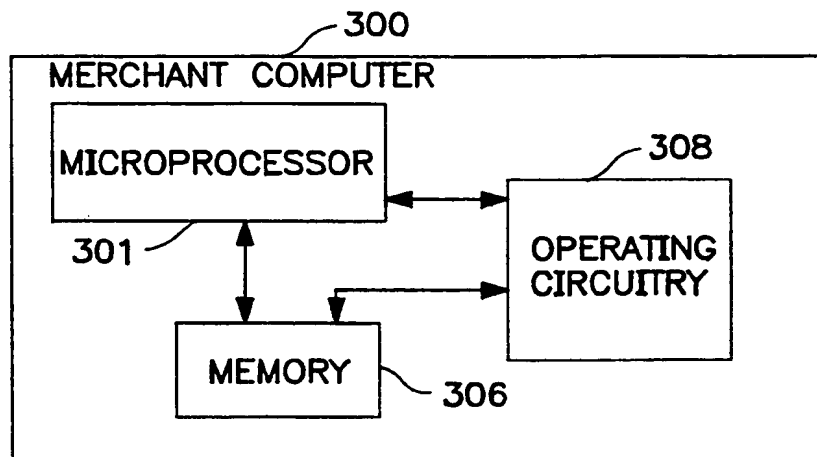


FIG. 3

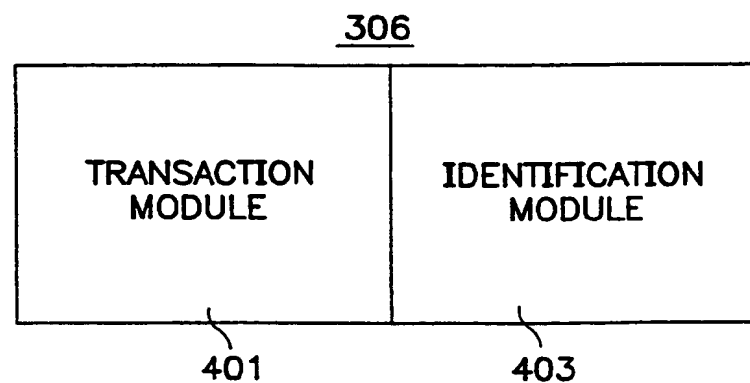


FIG. 4

SUBSTITUTE SHEET (RULE 26)

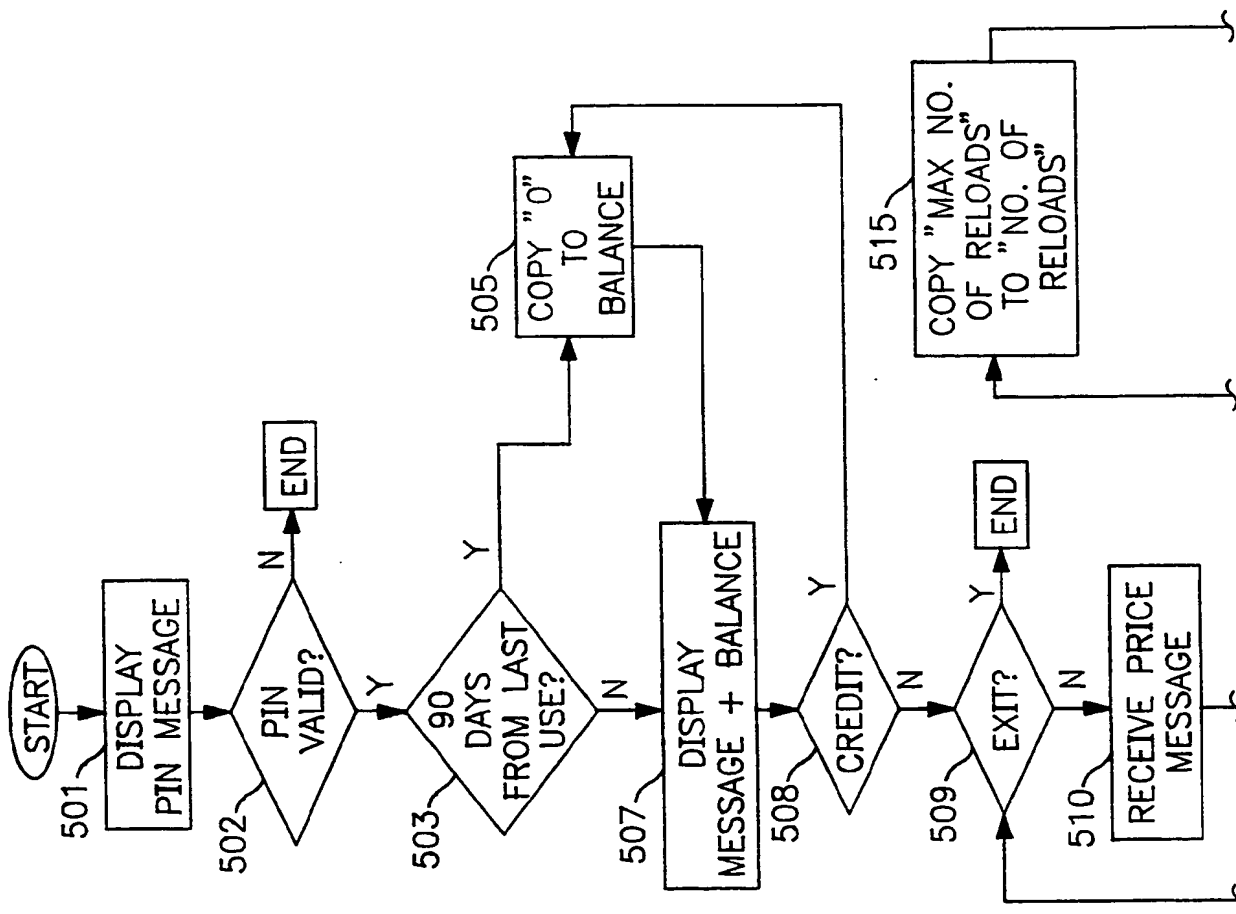
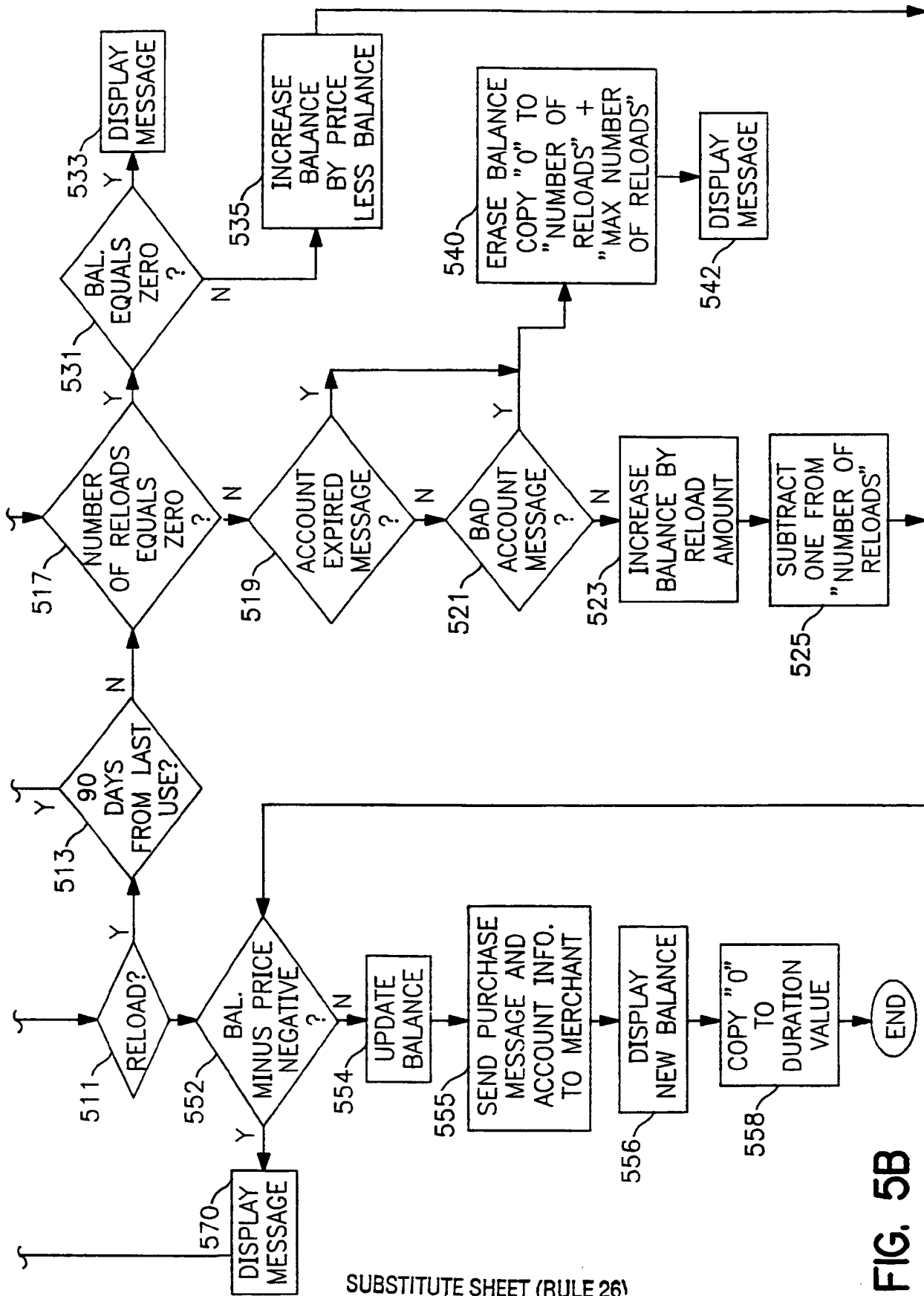


FIG. 5A

4/7



SUBSTITUTE SHEET (RULE 26)

5/7

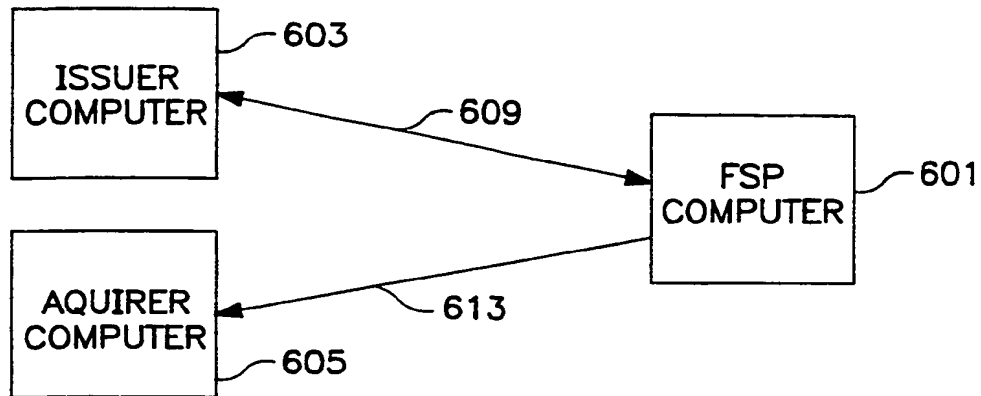


FIG. 6

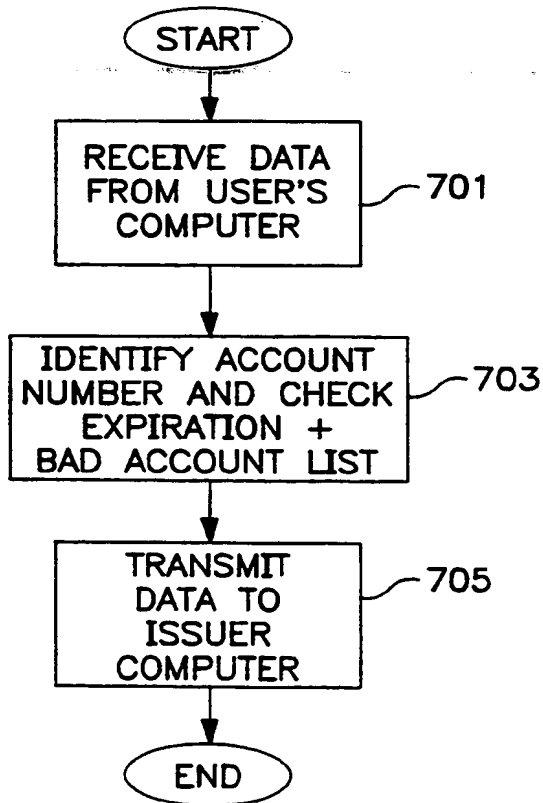


FIG. 7A

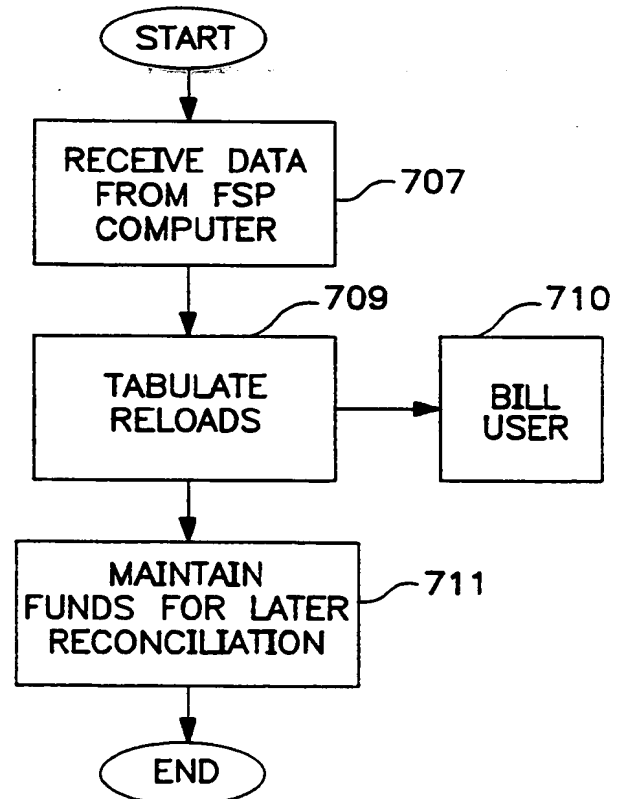


FIG. 7B

SUBSTITUTE SHEET (RULE 26)



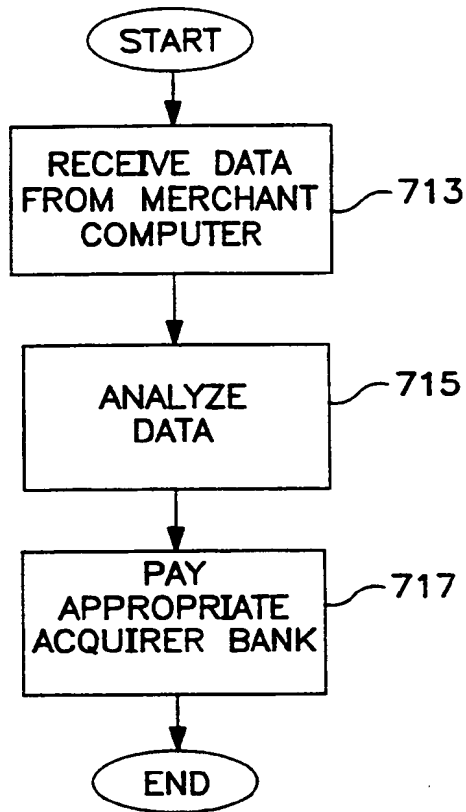


FIG. 7C

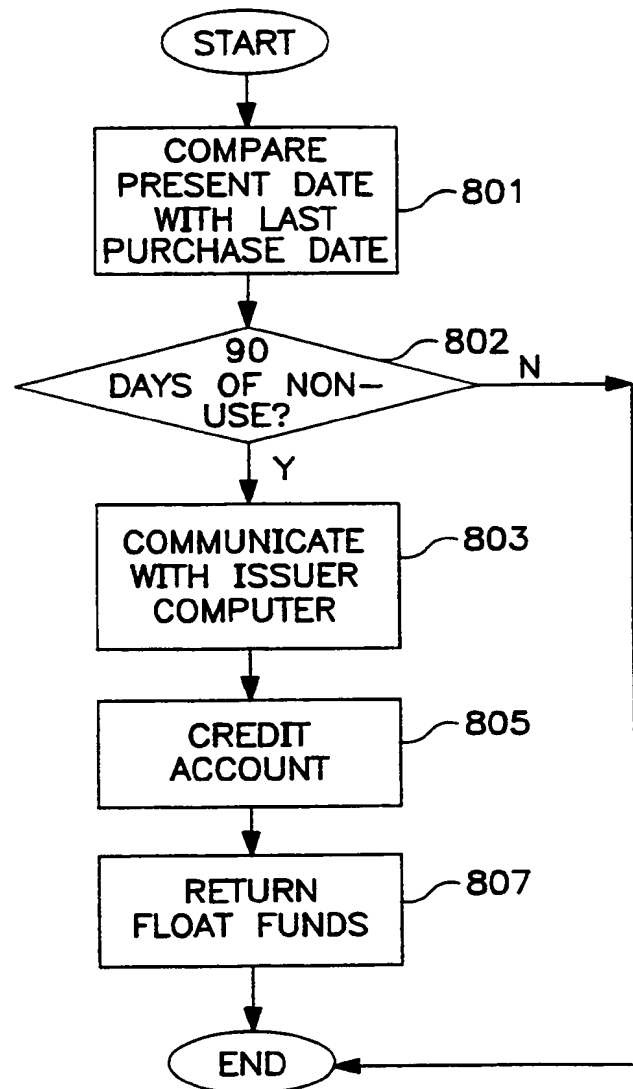


FIG. 8

7/7

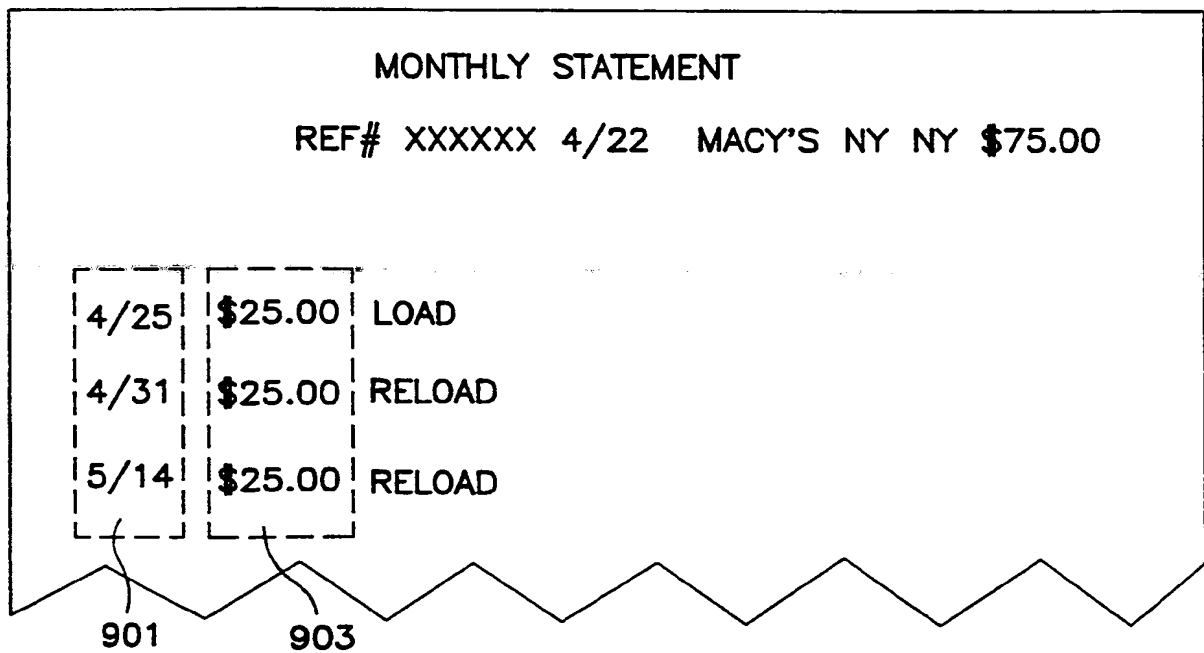


FIG. 9

SUBSTITUTE SHEET (RULE 26)

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 96/02854

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 6 G06F17/60

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP,A,0 542 298 (CITIBANK NA) 19 May 1993 see page 8, line 25 - page 11, line 46 see page 13, line 16 - page 15, line 47 see page 18, line 40 - page 24, line 25 ---	1-112
X	US,A,5 420 405 (CHASEK NORMAN E) 30 May 1995  see column 3, line 14 - column 6, line 16; figures 1A,1B,2A --- -/--	1,12,22, 30,39, 48,57, 68,78, 86,95, 104

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

3 July 1996

Date of mailing of the international search report

18. 07. 96

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+ 31-70) 340-2040, Tx. 31 651 epo nl,  
Fax (+ 31-70) 340-3016

Authorized officer

Suendermann, R

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 96/02854

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP,A,0 416 916 (FUJITSU LTD) 13 March 1991  see column 3, line 40 - column 5, line 37 ---	1,12,22, 30,39, 48,57, 68,78, 86,95, 104
E	WO,A,96 08783 (FIRST VIRTUAL HOLDINGS INC) 21 March 1996 see page 8, line 15 - page 23, line 25 -----	1-112

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 96/02854

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP-A-0542298	19-05-93	US-A- 5453601	26-09-95
		AU-B- 2013695	20-07-95
		AU-B- 2013795	20-07-95
		AU-B- 2013895	20-07-95
		AU-B- 2013995	20-07-95
		AU-B- 658233	06-04-95
		AU-B- 2739292	17-06-93
		CA-A- 2080452	16-05-93
		CN-A- 1073789	30-06-93
		DE-T- 542298	16-12-93
		HU-A- 65212	02-05-94
		JP-A- 6162059	10-06-94
		JP-B- 7111723	29-11-95
		PL-A- 300041	05-04-94
		WO-A- 9310503	27-05-93
		US-A- 5455407	03-10-95
		ZA-A- 9208773	13-05-93
-----			
US-A-5420405	30-05-95	NONE	
-----			
EP-A-0416916	13-03-91	JP-A- 3092966	18-04-91
-----			
WO-A-9608783	21-03-96	AU-B- 3630995	29-03-96
-----			

1. The first part of the document is a list of the names of the persons who have been named in the proceedings.

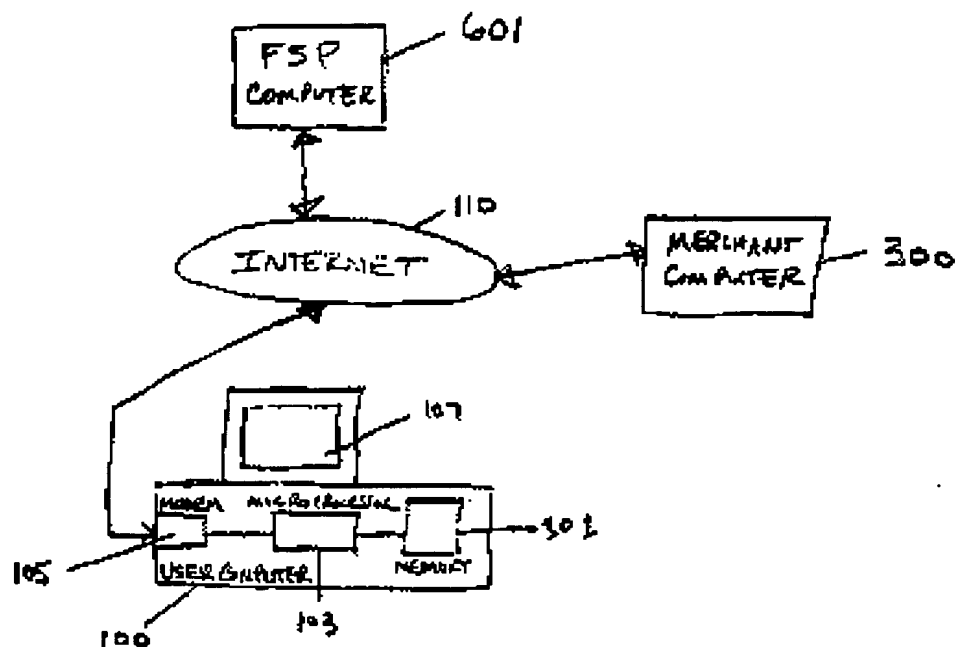


Fig. 1

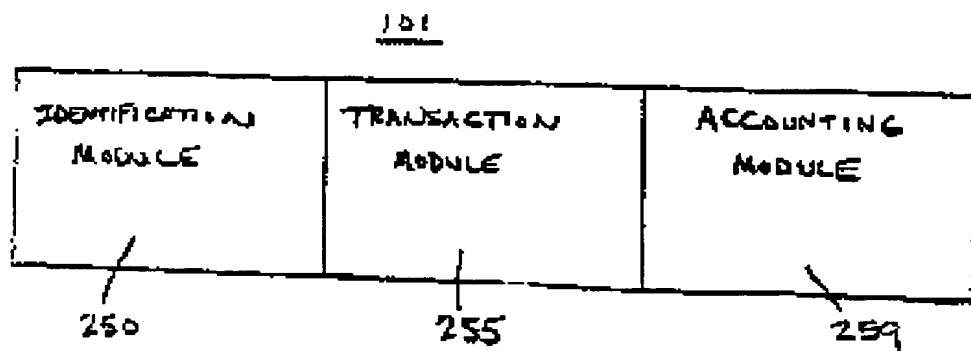


Fig. 2

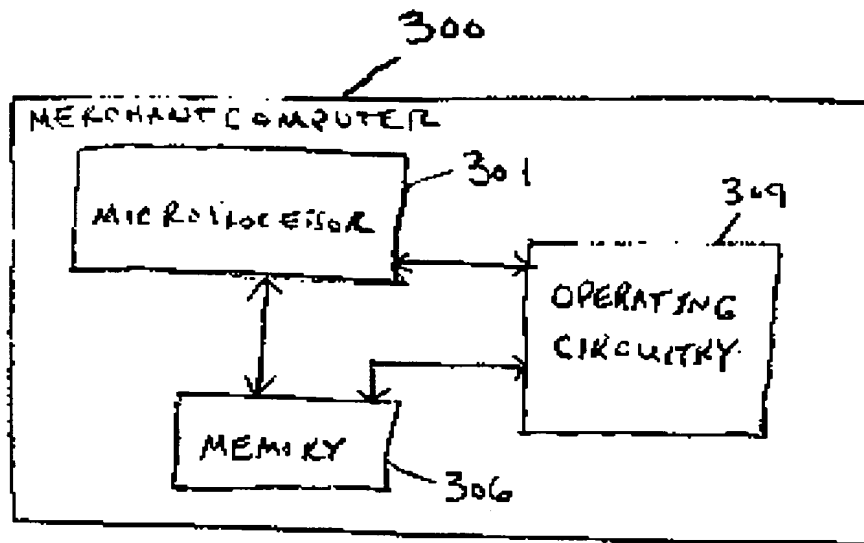


Fig. 3

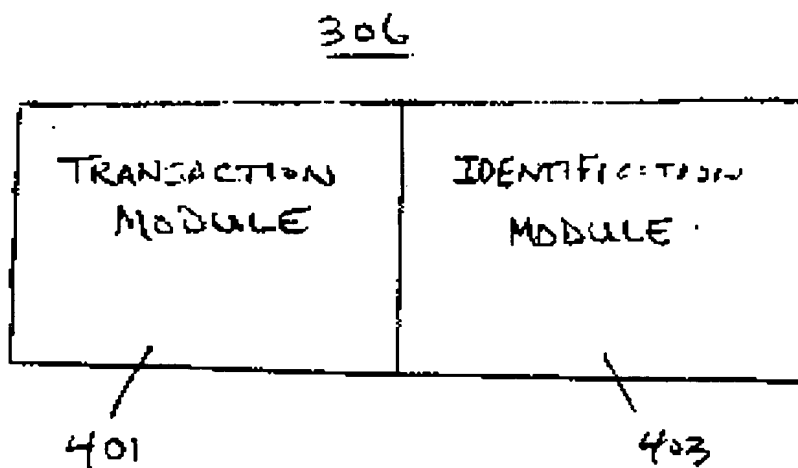


Fig. 4



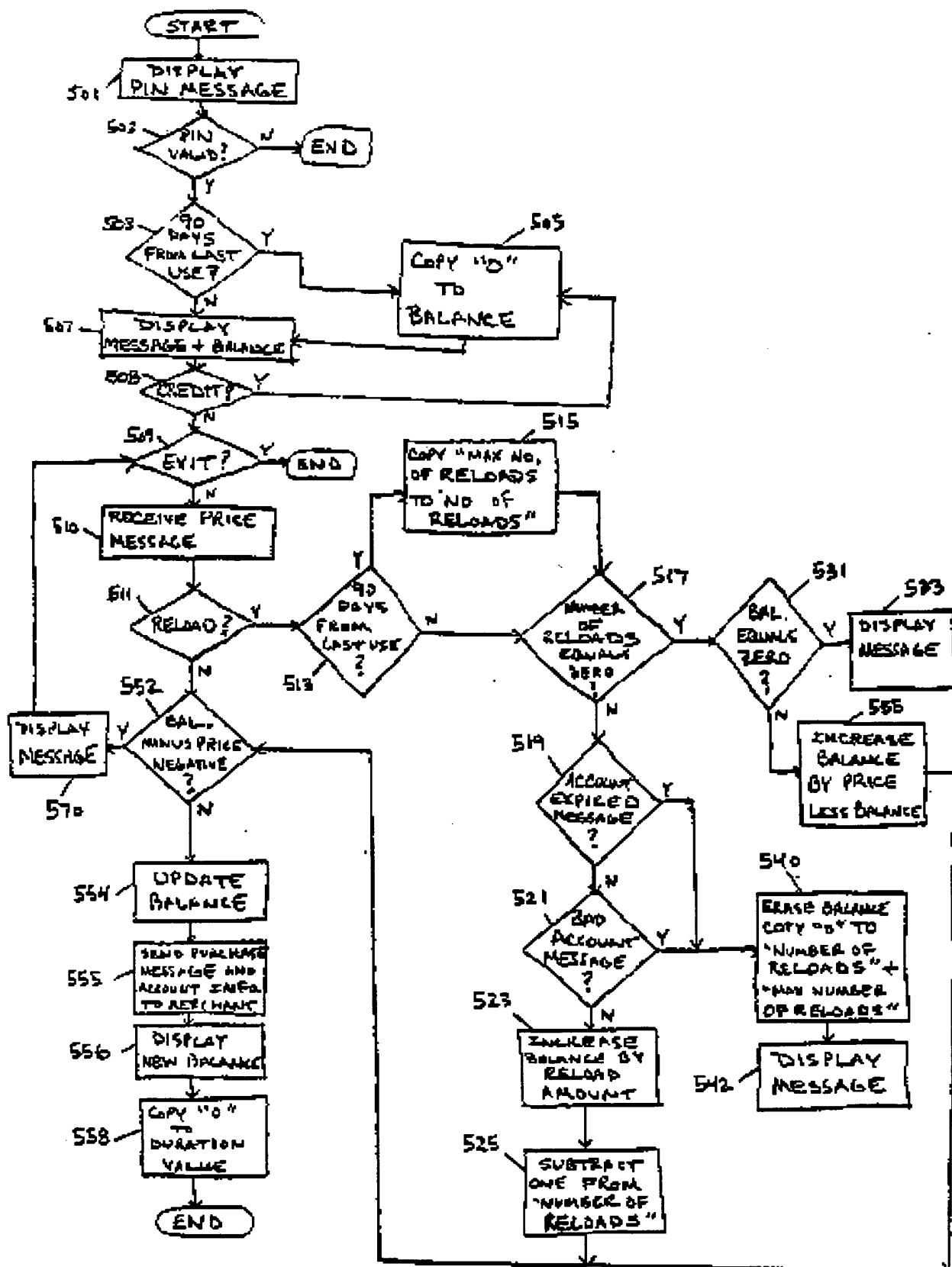


Fig. 5

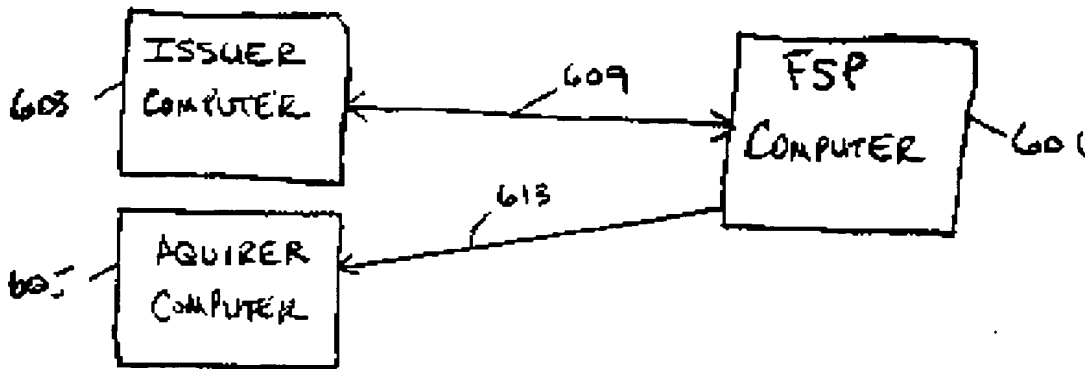


Fig. 6

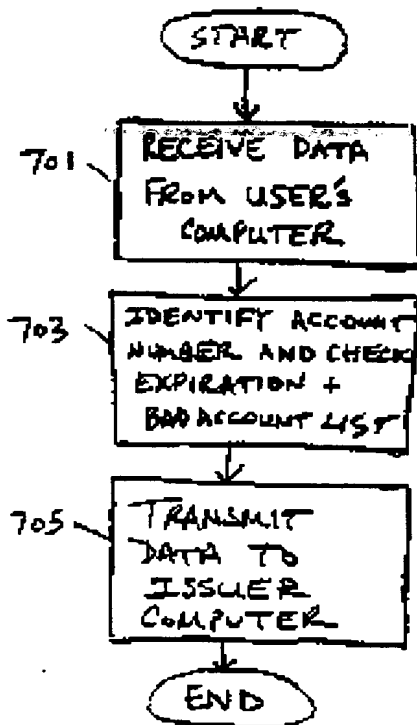


Fig. 7A

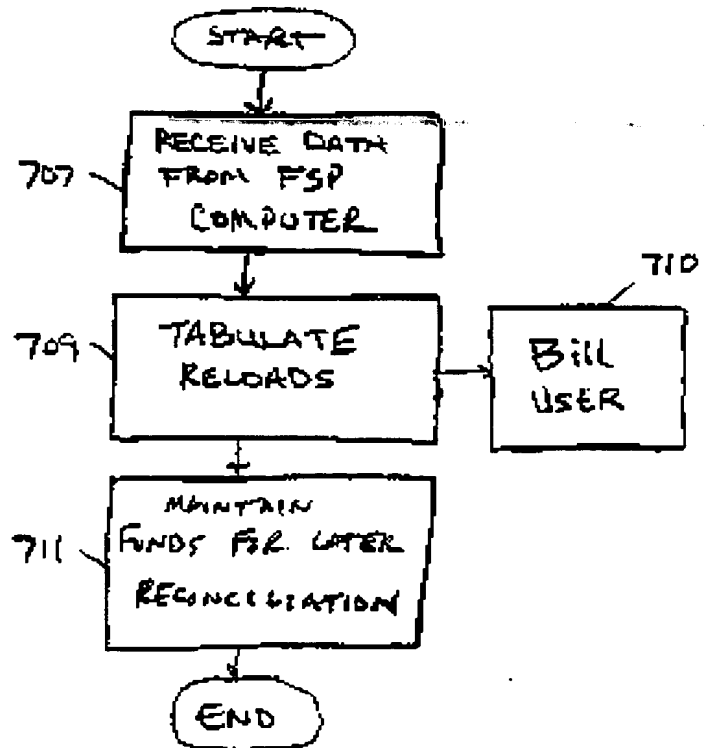


Fig 7B

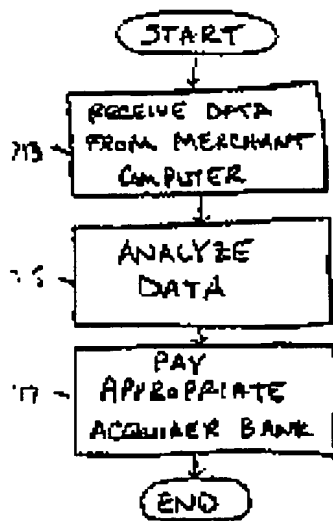


Fig. 7C

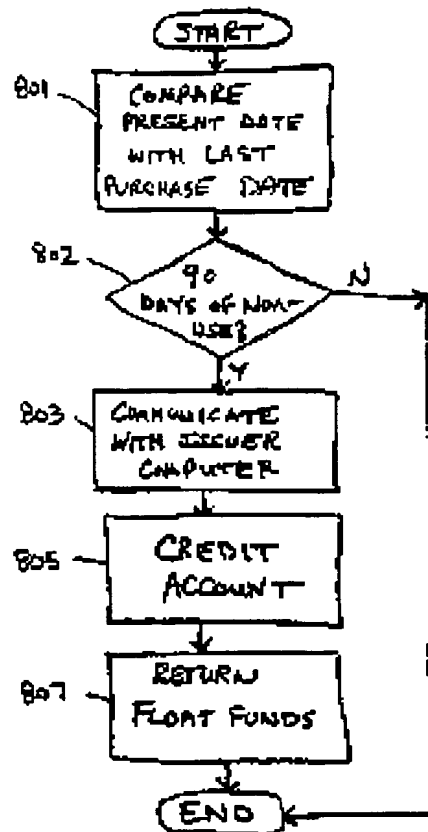


Fig. 8

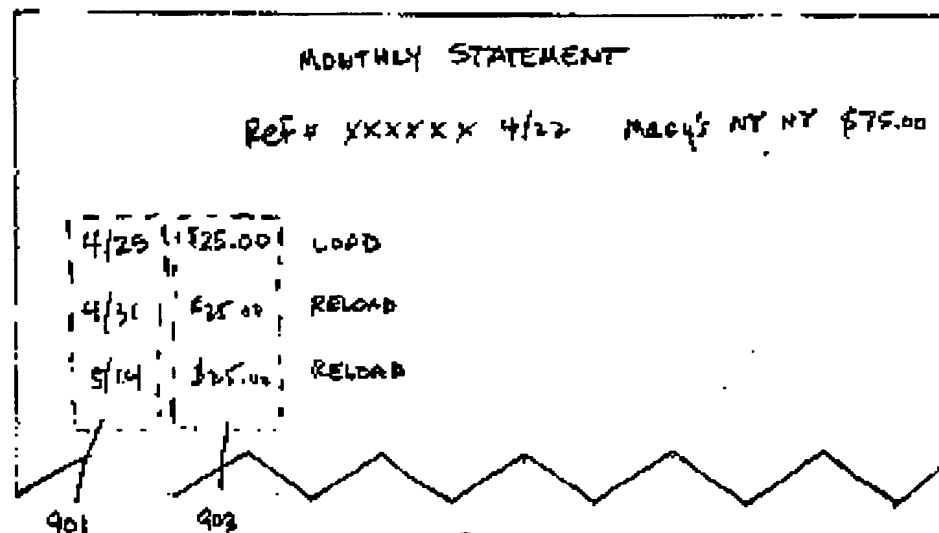


Fig. 9

THIS PAGE BLANK (USPTO)

**THIS PAGE BLANK (USPTO)**